6.0 Input and Coordination

The South La Crosse Transportation Study included an active public participation process. Public participation included meetings as well as a number of separate surveys to gather information from study area residents, roadway users, pedestrians, cyclists, and other individuals. Table 4, Public Involvement History includes a list of public involvement activities that occurred over the course of the study.

Table 4 – Public Involvement History

Date	Activity	Who Invited/Attended
Sept. 2, 2004	Local Business Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local Business Owners (30)
Sept. 2, 2004	Public Information Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local/Government Officials, General Public (120)
Jan. 6, 2005	Local Information Center	WisDOT, SEH, LAPC, City of La Crosse, Local/Government Officials, General Public (100)
Mar. 30, 2005	Local Business Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local Business Owners (20)
Mar. 30, 2005	Public Information Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local/Government Officials, General Public (50)
June 15, 2005	33rd Street Neighborhood Meeting	WisDOT, SEH, Neighborhood Representatives (25)
July 12, 2005	Local Business Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local Business Owners (20)
July 12, 2005	Public Information Meeting	WisDOT, SEH, LAPC, City of La Crosse, Local/Government Officials, General Public (40)

6.1 Surveys

Three surveys were used to gather information for the study:

- Telephone Survey
- Local Business Survey
- Multi-modal Corridor Field Guide

6.1.1 Telephone Survey

The telephone survey was conducted by St. Norbert College Survey Center located in De Pere, WI. The goal of the study was to gather information from residents of a catchment area within approximately one mile of the US 14/61/WIS 35 corridor regarding their opinions of highway usage, aesthetics, safety, traffic patterns, congestion, alternative routes, and future development. A total of 400 telephone interviews were completed between

June 3rd and June 23rd, 2004. Respondents were scientifically selected so that the survey would be representative of drivers 16-years-old and older who use the study area highways (see Appendix D, Telephone Survey Summary).

6.1.2 Local Business Survey

A mail survey of businesses located on or near the urban segment was conducted as part of the study. The goal of the survey was to collect information from a business owner/operator perspective. The survey collected information pertaining to local perceptions of economic vitality along the urban segment, local perceptions of land use and transportation relationships, traffic issues, the importance of multi-modal opportunities, safety, and aesthetics. Many of the questions asked in the business survey were also asked as part of the telephone survey for comparison purposes (see Appendix E, Local Business Survey).

6.1.3 Multi-modal Corridor Field Guide

A field guide is an interactive tool that corridor users can use to observe and comment on existing conditions along transportation facilities. The Multi-modal Corridor Field Guide was intended to gear observations specifically toward bike, pedestrian, and transit facilities along South Avenue/Mormon Coulee Road. Participants used the guide to travel to specific locations, make observations, and report comments.

The guide was distributed with the aid of the LAPC Bike/Pedestrian Committee to local users of the South Avenue/Mormon Coulee Road Corridor. Observations from the returned guides were considered in the development of corridor alternatives.

6.2 Agency Coordination

In addition to the public participation component of the study, coordination also occurred with state and local government agencies throughout all phases of the study. The meetings included coordination of the Multi-modal Corridor Field Guide with the LAPC Bike/Pedestrian Committee, two update meetings for the LAPC, and two internal progress meetings for the study communities and their representatives.

7.0 Analysis of Geometric Deficiencies

The urban segment (Segment A) was analyzed for existing geometric and safety deficiencies. The segment is located on South Avenue/Mormon Coulee Road (US 14/61/WIS 35) on the southwest side of the City of La Crosse beginning at Green Bay Street and heading southerly to the US 14/61/WIS 35 intersection. The urban segment is a low speed urban arterial with posted speeds ranging from 30 mph between Green Bay Street and Ward Avenue to 40 mph from Ward Avenue to the end of the segment. A total of 21 intersections with public streets and two railroad crossings (one is a grade-separated crossing) exist along the segment. South Avenue/Mormon Coulee Road is part of the National Highway System (NHS) and is a designated long truck route.

The urban segment was analyzed to identify geometric and safety deficiencies. The analysis included a review of as-built plans listed in Table 5, As-built Plans Reviewed, traffic and crash data, and a 2001 WisDOT photo-log. In addition, field reviews were conducted. The results of the analysis are documented in the sections that follow.

Table 5 – As-built Plans Reviewed

Coverage Limits			Plan Number	Year
Intersection	To	Intersection		
Green Bay Street/Simms Place	-	West Avenue	1641-02-71	1997
Green Bay Street/Simms Place	-	West Avenue	U08-3(27)	1948
West Avenue	-	17th Street	City Plans	1977
17th Street	-	East Avenue/Ward Avenue	5991-5-12	1977
East Avenue/Ward Avenue	-	Robinsdale Avenue	1641-03-71	1991
Robinsdale Avenue	-	Shelby Road/Broadview Place	City Plans	1980
Shelby Road/Broadview Place	-	Calvert	1641-6-71	1980
Calvert	-	US 14/61	1641-6-73	1981

7.1 Horizontal Alignment

In a number of locations along the corridor, the horizontal alignment consists of tangent deflections without horizontal curves. WisDOT Facility Development Manual (FDM) Procedure 11-10-5, Table 1 defines the maximum deflection allowed without a horizontal curve to be two degrees for a facility with a 35 mph design speed. For a 45 mph design speed, the maximum deflection is one degree. None of the deflections present along the urban segment were found to be substandard.

Horizontal curvature exists throughout the facility but predominately in the southern portion of the segment. All curves were found to conform to the latest urban design standards.

7.2 Vertical Alignment/Stopping Sight Distance (SSD)

The FDM Procedure 11-10-5, Table 6 defines the maximum change in grade without a vertical curve to be 0.9 percent for a facility with a 35 mph design speed and 0.7 percent for a 45 mph design speed. No substandard changes in vertical profile grade were found within the project corridor.

The FDM Procedure 11-10-5, Figure 3 defines the desirable and minimum sag/crest K values for vertical curves associated with Stopping Sight

Distances (SSD). All vertical curves analyzed within the project corridor meet the minimum criteria for SSD. Areas that meet the minimum standards but do not meet the desirable standards are vertical curves approximately 200 feet south of Bennett Street, 65 feet south of Medinger Place, and structure B-32-82 over the Burlington Northern Santa Fe Railroad.

Procedure 11-10-05 further defines the desirable grades to meet drainage requirements be 0.5 percent or greater with a minimum of 0.3 percent. Grades exist within the project corridor ranging from less than 0.3 percent up to 4.0 percent. Upon review of the available as-built plans, several areas were identified that do not meet the minimum of 0.3 percent. Areas where substandard grades exist are listed in Table 6, Substandard Drainage Grades. Review of the WisDOT photo-log between Green Bay Street and West Avenue indicated that driving lanes were added within this area. It is likely that the added lanes follow the profile of the original lanes.

Table 6 – Substandard Drainage Grades

As-built Plan	Year	Location	Feet
U08-3(27)	1948	Green Bay Street and West Avenue	900
City Plans	1977	Horton Street and Bennett Street	400
City Plans	1977	Chase Street and Thompson Street	900
1641-03-71	1991	Victory Street and Robinsdale Avenue	2,500
City Plans	1979	Robinsdale Avenue and Birch Street	200

7.3 Cross Section

The urban segment of the study area consists of an urban cross section composed of four travel lanes with lanes varying in width between portions of the facility. The roadway is typically constructed as concrete pavement with some areas of asphaltic overlay.

7.3.1 Long Truck Route

WisDOT FDM Procedure 11-20-1 requires lane widths for a federally designated long truck route to be 12 feet for at least one lane in each direction of travel (not including the gutter width). In addition, the FDM also defines lane widths for NHS Routes and arterials not designated as long truck routes with high truck and bus volumes (greater than 5.0 percent) to be 12 feet. A 12 foot outer lane in each direction of travel is maintained throughout approximately 87 percent of South Avenue/Mormon Coulee Road. The remainder of the urban segment (approximately 2,400 feet) has substandard outer driving lane widths.

Between Green Bay Street and East Avenue/Ward Avenue an 11 foot inner driving lane is maintained with a 13 foot outer driving lane measured to the face of the curb. This portion of the roadway consists of concrete pavement with integral curb and no delineation of the gutter pan. This portion was not considered substandard due to an assumed gutter pan width of one foot accommodating an outer driving lane width of 12 feet.

The portion of Mormon Coulee Road located between Robinsdale Avenue and Shelby Road/Broadview Place consists of asphalt pavement with curb and gutter. The substandard portion consists of two 11 foot driving lanes maintained in each direction with a two foot gutter pan adjacent to the outer driving lanes. The outer lane edges are clearly delineated by the gutter pan in

this portion of the urban segment. Table 7, Cross Section depicts the varying widths along the urban segment of the study area.

Table 7 – Cross Section

Coverage Limits			Cross Section Widths							
Intersection	To	Intersection	Curb Flange (feet)	Lane (feet)	Lane (feet)	Median (feet)	Lane (feet)	Lane (feet)	Curb Flange (feet)	Face to Face (feet)
Green Bay Street/Simms Place	-	East Avenue/Ward Avenue	1	12	11	0	11	12	1	48
East Avenue/Ward Avenue	-	Robinsdale Avenue	2	12	12	14	12	12	2	66
Robinsdale Avenue	-	Shelby Road/Broadview Place	2	11	11	14	11	11	2	62
Shelby Road/Broadview Place	-	US 14/61	2	12	12	14	12	12	2	66

7.3.2 Curb Offset

WisDOT FDM Procedure 11-20-1 defines a desired two foot offset to the face of curb with one foot being the minimum for raised medians and outside curb along the edge of the traveled way. The urban segment provides a 13 foot outside lane measured to the curb face from Green Bay Street to East Avenue/Ward Avenue. No striping was evident from viewing the WisDOT photo-log that would help define lane width in this portion of the segment. To maintain a 12 foot outer lane, a one foot outer curb offset was assumed. From East Avenue/Ward Avenue south to the end of the urban segment a two foot outside curb offset exists. Raised median curb offsets are generally one foot throughout the project corridor.

7.3.3 Two-Way-Left-Turn-Lane Segment

FDM Procedure 11-25-5 defines a two-way left turn lane (TWLTL) as a traffic lane in the median area being 14 to 16 feet in width. South Avenue has no median between Green Bay Street and 17th Street and designated turn lanes for both northbound and southbound traffic between East Avenue/Ward Avenue. Mormon Coulee Road, with the exception of the bridge over the Burlington Northern Santa Fe Railroad (B-32-82), has a 14 foot TWLTL.

7.3.4 Cross Slope

FDM Procedure 11-20-1, Table 1 defines pavements of urban roadways to be a minimum of two percent cross slope and a maximum of three percent. Cross slopes throughout most of the urban segment are predominantly two percent. Cross slopes of 1.5 percent exist on the inner driving lanes between Shelby Road and the southern end of the segment and on structure B-32-82. Superelevation exists at the southern end of Mormon Coulee Road within the US 14/61/WIS 35 intersection.

7.3.5 Lateral Clearance

FDM Procedure 11-20-1 further defines that on low-speed urban roadways without parking, the greater of four feet or two feet plus the offset from edge of driving lane to face of curb is desired. The minimum lateral clearance should be two feet plus the offset from edge of driving lane to face of curb. Currently the areas between 1,100 feet south of Green Bay Street to West Avenue on the east and 400 feet south of Green Bay Street to East Avenue/Ward Avenue on the west contain power poles within the three foot terrace (face of curb to front edge of sidewalk).

7.4 Intersection Layout

WisDOT FDM Procedure 11-25-5, Figure 1 defines the following when designing the elements of an intersection:

- Turn lane widths are desired to be 12 feet with a minimum of ten feet.
- Turn lane tapers are desired to be a ratio of 15:1 with a minimum of 10:1. Taper lengths shorter than 10:1 typically do not allow the full development of the left-turn bay.
- Turn lane lengths are desired to be 100 feet with a minimum of 50 feet each with the addition of 25 feet for each car stored.

Table 8, Existing Turn Lanes lists the intersections with turn lanes along the urban segment of the study area.

Table 8 – Existing Turn Lanes

South Avenue/Mormon Coulee Road at	Left-Turn Bay Length (feet)		Left-Turn Bay Taper Rate		Right-Turn Bay Length (feet)		Right-Turn Bay Taper Rate	
	SB	NB	SB	NB	SB	NB	SB	NB
Green Bay Street/Simms Place	230	280	8.2:1	8.2:1				
West Avenue						115		8.3:1
East Avenue/Ward Avenue	240	330	7.3:1	10:1				
Victory Street/21st Street	115	220	6:1	10:1				
Losey Boulevard	140	130	10:1	10:1	155	145	10:1	10:1
Birch Street	100	100						
Shelby Road/Broadview Place	110	100		6.7:1				
Wal-Mart Entrance	75	150	6.8:1	6.4:1	150		5.8:1	
Garner Place	75							

A Policy on Geometric Design of Highways and Streets (GDHS) states that the angle of intersection should be between 60 and 120 degrees and preferably close to 90 degrees. The GDHS also defines a multi-leg intersection as having five or more intersection legs and should be avoided whenever possible. The traffic operational efficiency can often be improved by reconfigurations that remove some of the conflicting movements. Currently nine out of the 22 intersections within the project corridor have five or more legs and/or angles outside of 60 – 120 degrees. Table 9, Multi-leg and Angle Intersections below lists the intersections along South

Avenue/Mormon Coulee Road that contain more than four legs and/or excessive angle of intersection.

Table 9 – Multi-leg and Angle Intersections

Intersection	Number of Legs	Approximate Intersecting Angle (degrees)	Intersection Control
West Avenue	4	45	Signalized
13th Street/Horton Street	6	45	Sign
13th Street/Bennett Street	5	45	Sign
14th Street/Townsend Street	6	45	Sign
15th Street/Chase Street	6	45	Sign
16th Street/Thompson Street	4	45	Sign
17th Street	3	45	Sign
East Avenue/Ward Avenue	5	45/90	Signalized
Robinsdale Avenue	3	60	Sign

FDM Procedure 11-25-5, Figure 1 defines desired left-turn radii to be 75 feet with islands and 60 feet without islands to best accommodate the turning movements of a WB-62 design vehicle (truck with trailer). Table 10, Intersection Turn Radii lists intersections that have raised medians along the South Avenue/Mormon Coulee Road segment and the left-turn radii associated with their various movements. Six intersections have turning radii less than 75 feet, however, a turning template would have to be run to further verify if truly substandard conditions exist.

Turning templates for a WB-62 design vehicle were used to analyze the US 14/61/WIS 35 intersection. The north to east movement was unable to accommodate the design vehicle. The rear wheels tracked 1.5 feet behind the face of curb.

Table 10 – Intersection Turn Radii

Intersection	South Left-turn Radius (feet)	North Left-turn Radius (feet)	East Left-turn Radius (feet)	West Left-turn Radius (feet)
Green Bay Street/Simms Place	75	75	75	75
East Avenue/Ward Avenue	70	60	50	40
Victory Street/21st Street	70	70	70	70
Losey Boulevard	70	70	70	85
Birch Street*	40	40	40	40
Shelby Road*/Broadview Place	40	40	40	40
US 14/61/WIS 35	90	---	50	---

**Intersections without raised medians on the intersecting roadway*

7.5 Structures and Barriers

7.5.1 Structures

WisDOT FDM Procedure 11-35-1 defines the clear width on urban roadways to be equal the full roadway width necessary to carry the design traffic which includes the traveled way, the shoulder width, and the gutter pan. One structure exists within the project corridor. Structure B-32-82 overpasses the Burlington Northern Santa Fe Railroad and maintains 54 feet between the parapets which is adequate to carry the design traffic.

7.5.2 Barriers

The FDM Procedure 11-45-1 defines the preferred standard end treatment for the approach end of steel plate beam guard for all projects on the National Highway System to be an Energy Absorbing Terminal (EAT). Steel plate beam guard exists on both sides of Mormon Coulee Road approaching structure B-32-82. Steel plate beam guard also exists within the median approximately 500 feet north of the US 14/61/WIS 35 intersection shielding an overhead sign support. At both locations obsolete turn-down end treatment is being used.

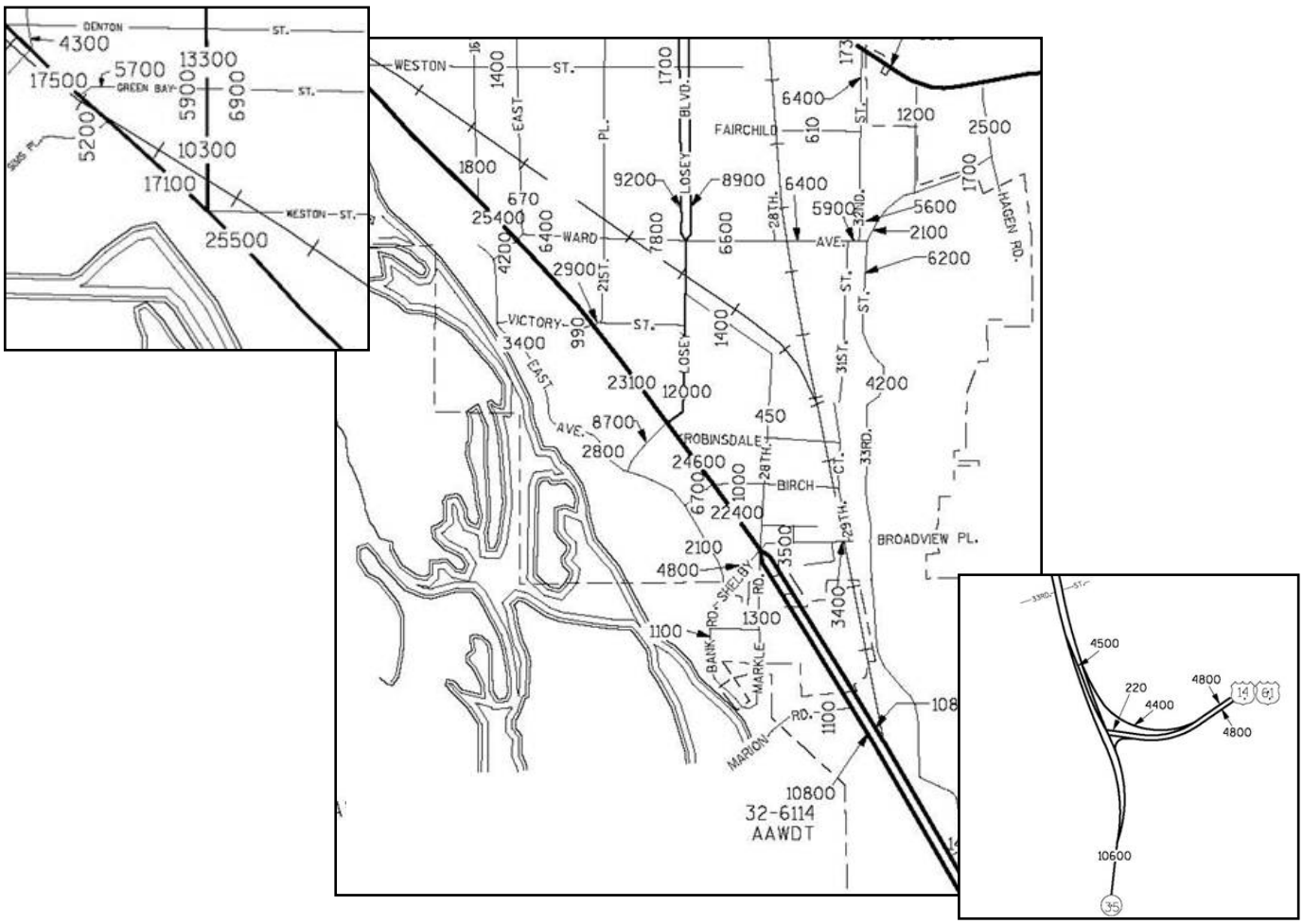
8.0 Traffic Analysis

This study included an in-depth analysis of existing and anticipated traffic volumes along South Avenue/Mormon Coulee Road. The analysis included modeling existing and future traffic conditions along the urban segment using Synchro/SimTraffic. In addition, traffic forecast information from the updated LAPC traffic model were used to determine timing of existing improvement plans along both rural segments of the corridor.

8.1 Existing Traffic Conditions

The information in this section uses the existing daily and peak hour volumes within the study area. The existing daily volumes on the segments along the corridor were provided by the WisDOT Highway Volume Data series. The most recent year of information available is 2002, shown in Figure 6, 2002 Average Annual Daily Traffic. The numbers shown are an average annual daily traffic (AADT) volume.

Figure 6 – 2002 Average Annual Daily Traffic



In addition to these daily volumes, weekday peak period turning movement counts were collected in May and October 2004. The peak volumes are what the operational analysis is based upon. Intersection information was

collected at the following locations, from south to north (see Appendix F, Intersection Turning Movement Count Data):

- WIS 35 & County K
- WIS 35 & Sunnyside Drive
- WIS 35 & Riverview Drive
- WIS 35 & Old Town Hall Road
- US 14/61 & WIS 35
- Mormon Coulee Road (US 14/61/WIS 35) & 33rd Street
- Mormon Coulee Road & Wal-Mart Access
- Mormon Coulee Road & Shelby Road
- Mormon Coulee Road & Birch Street
- Mormon Coulee Road & Losey Boulevard
- Mormon Coulee Road & Victory Street
- South Avenue (US 14/61/WIS 35) & East Avenue/Ward Avenue
- South Avenue & 16th Street
- South Avenue (US 14/61) & West Avenue (WIS 35)/Weston Street

8.1.1 Traffic Volumes & Conditions

Current traffic volumes along South Avenue and Mormon Coulee Road range from 17,200 to 26,000 vehicles per day. Current weekday peak hour operations are generally adequate with acceptable levels of service and sufficient capacity to serve the traffic demand. One exception is that the operations at the intersection with West Avenue/Weston Street are currently resulting in more vehicle delay than acceptable. During peak periods, substantial delay is sometimes experienced by vehicles turning left onto or crossing the mainline from some unsignalized side street approaches. In total however, the corridor currently has sufficient capacity. Figure 3, Current and Future Congestion – Urban Segment illustrates the general operations quality along the urban portion of the corridor. Table 14, Mainline Intersection Options lists the intersection levels of service for the existing conditions.

8.1.2 Percent Trucks

Heavy vehicle proportions along the urban segment range from five percent to ten percent.

8.1.3 Crash Analysis

An analysis of crashes occurring on the urban segment of South Avenue/Mormon Coulee Road was conducted for the period between 2001 and 2003. Both intersection and segment crash rates were calculated for the urban segment (South Avenue/Mormon Coulee Road). For analysis purposes, the portion of South Avenue north of the East Avenue/Ward Avenue intersection was looked at individually. This segment consists of a four-lane undivided roadway without turn accommodations. Table 11, Segment Crash Statistics, depicts the overall crash information for the entire

urban corridor and the South Avenue portion in comparison to similar urban highways across the state.

Table 11 – Segment Crash Statistics

General Statistics	South Ave./Mormon Coulee Rd.	South Ave. Segment	State Average*
Years Studied	2001 - 2003	2002 - 2003	--
Number of Road Miles	3.6	0.69	--
2002 AADT (vpd)**	22,000	18,900	--
Total Number of Crashes	150	59	--
Crashes per 100 Million Vehicle Miles (MVM)	173	285	270
Number of Crashes with injuries	66	26	--
NFI (Non-Fatal Injury) Crash Rate per 100 MVM	76	126	93
Number of Crashes with Fatalities	0	0	--
Fatal Crash Rate per 100 MVM	0	0	0.6

** The state average is listed for similar state highways, excludes deer crashes, and is an average of the crash rates for the years 2001-2003.*

*** AADT is reported as an adjusted average of counts taken at multiple locations for year 2002.*

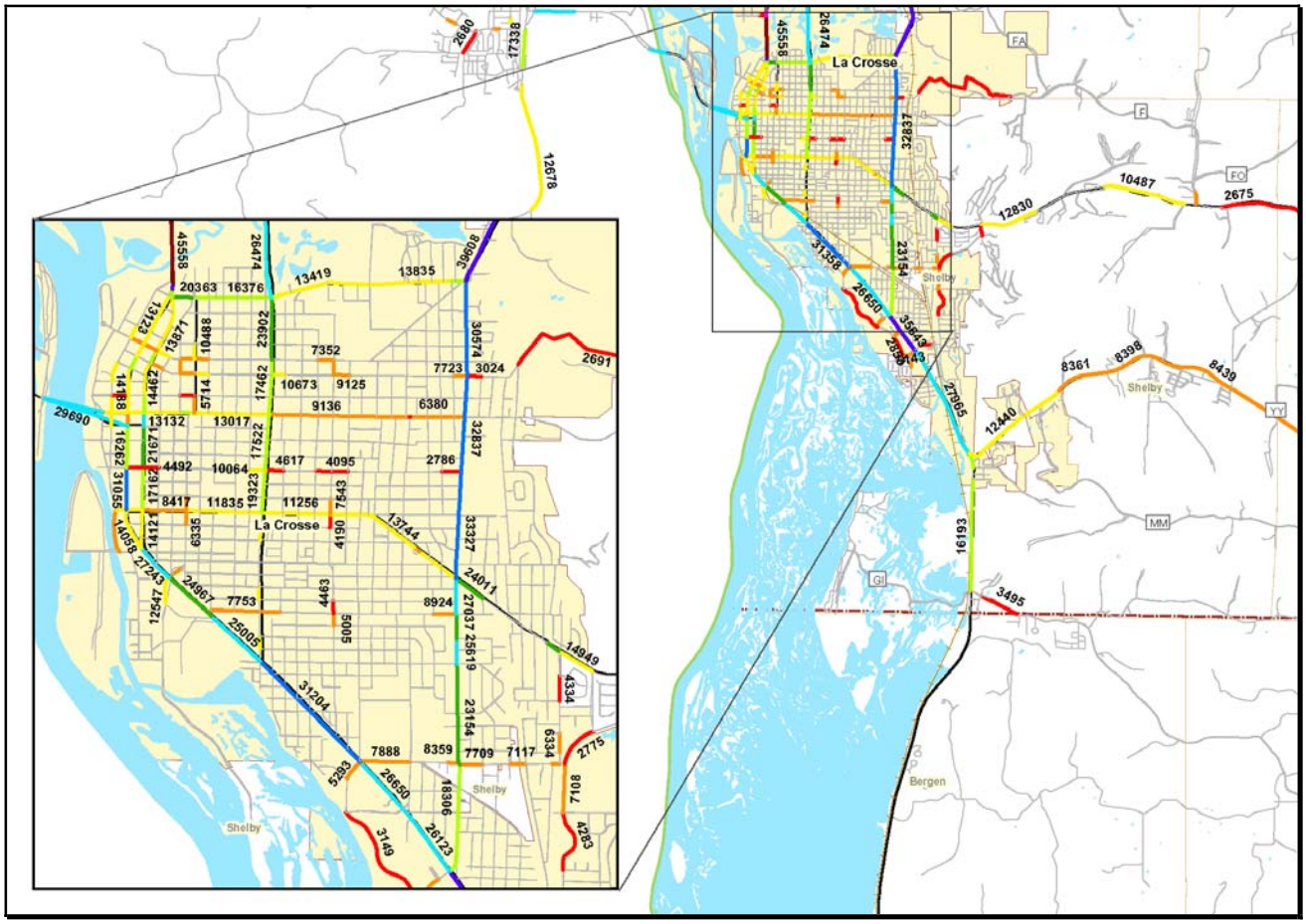
Though the urban segment as a whole falls under the statewide average for similar facilities, the four-lane undivided portion exceeds both the crash rate and injury crash rate for similar state highways. As expected for this type of facility, the primary crashes on the corridor are rear end type collisions (76 percent). This crash type is common on urban roadways with numerous access locations and a lack of separation of turning vehicles from the main traffic stream. On South Avenue, the intersection crash rates were well below the 1.5 crashes per million entering vehicles threshold, however, because of the close proximity of intersections, it is likely that the rear end type collisions reflect turning vehicles accessing public intersections and private driveways along this segment.

8.2 Traffic Forecasts

All traffic forecasts were provided by the WisDOT Traffic Forecasting Section. No special traffic generators were added to the future volumes provided by WisDOT.

The forecasts for daily segment volumes were initially completed in October 2002 and updated in February 2005. A portion of the update is illustrated in Figure 7, 2030 Average Annual Daily Traffic on the following page.

Figure 7 – 2030 Average Annual Daily Traffic



The forecasts for the weekday afternoon peak hour were completed in July and October 2004. The WisDOT Traffic Forecasting Section provided projected volumes for the years 2010, 2020, and 2030. The turning movement volumes for the key intersections within the study area are summarized in the following table.

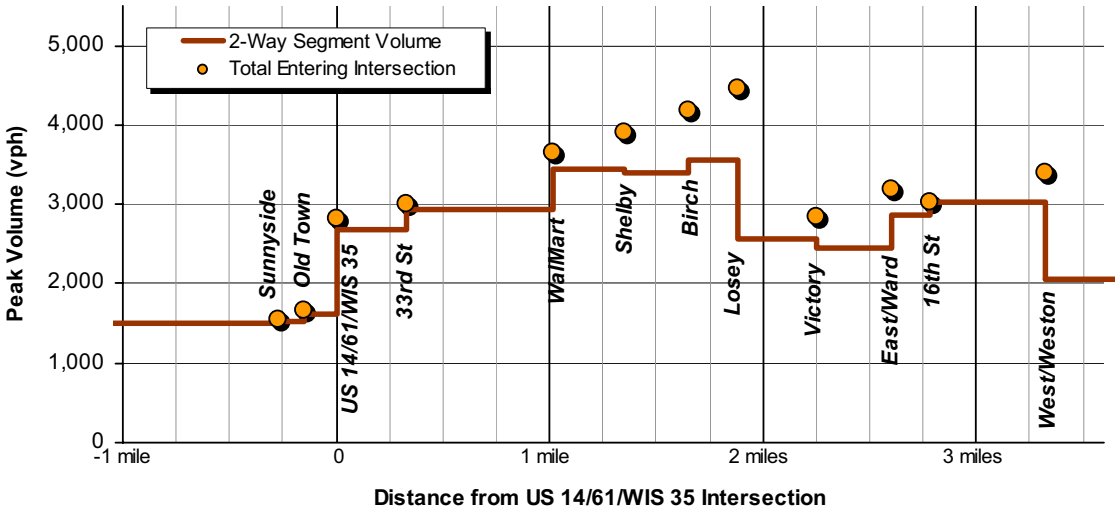
Table 12 – 2030 PM Peak Hour Turning Movement Volumes

Intersection	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
US 14/61/ WIS 35		410	130	860	930					105		400
33rd Street	5	865	50	45	1,775	115	60	5	20	55	5	20
WalMart Access	55	950	10	5	1,825	350	265	5	190	5	5	5
Shelby Road	70	1,030	65	80	2,065	95	75	55	185	100	55	60
Birch Street	85	1,175	20	25	1,775	250	405	65	340	15	35	15
Losey Blvd	40	760	615	75	1,250	235	165	230	100	735	240	45
Victory Street	55	1,015	85	40	1,320	35	45	40	55	95	45	30
East Ave / Ward Ave	35	865	45	255	1,120	125	220		220	140		175
West Ave / Weston St		755	565	5	1,255	20	40	70	15	655	35	

Figure 8, 2030 Peak Hour Volumes graphically illustrates the peak hour volumes from the table above. The graph is read from left to right, with the left side starting on the south (WIS 35) and the right side ending on the north side of the corridor. This type of plot clearly shows how mainline volumes vary along the corridor and which intersections are expected to experience

the greatest traffic demand. Higher volumes between US 14/61/WIS 35 and side roads at the intersections are represented by larger distances between the line and the circle at each intersection.

Figure 8 – 2030 Peak Hour Volumes



The volume is expected to increase from south to north between the US 14/61/WIS 35 intersection and Losey Boulevard. Losey Boulevard is expected to have the greatest PM peak hour traffic demand in 2030. It is also at this point that the volumes significantly drop to the north. Another substantial drop is seen at the South Avenue/West Avenue/Weston Street intersection.

8.3 Analysis Methodology

All traffic capacity and operational analyses were performed using Synchro/SimTraffic and the 2000 Highway Capacity Manual methods. All intersections were evaluated for one-, two-, and three-lane roundabouts using the methods in the FHWA Roundabout Guide, the RODEL roundabout analysis software, and the WisDOT Facilities Development Manual. Traffic signal warrants were evaluated in accordance with the Manual on Uniform Traffic Control Devices (MUTCD, 2003 Edition). All facilities were evaluated for their capacity-handling ability and for delay occurring during a typical a.m. and p.m. weekday peak hour. Each intersection was characterized by assigning a Level of Service (LOS) from the analysis. LOS is a letter grade assigned to a transportation facility to designate the quality of operations or extent of delay. The grades range from A (best) to F (worst):

- LOS A – primarily free-flow operations at average travel speeds; unimpeded maneuvering; delay at intersections is minimal
- LOS B – reasonably unimpeded operations; average travel speeds; maneuvering is only slightly restricted; unsubstantial delay at intersections
- LOS C – stable operations; maneuvering and lane-changing is more restricted than at LOS B; lower travel speeds but good throughput

- LOS D − typical operations goal; generally stable operations; small increases in flow can cause larger increases in delay and decreases in speed
- LOS E − congestion; unstable operations; significant delays; low travel speeds; commonly occurs when a facility is near capacity
- LOS F − extremely low speeds; significant congestion; extensive queuing; usually indicates an over-capacity condition

The design goal for all facilities along this corridor is for a LOS D or better during a typical weekday peak hour. At intersections, the goal is for a LOS D or better for each approach while ensuring sufficient capacity for all movements (see Table 14, Mainline Intersection Options).

Much of the analysis was performed using the Synchro/SimTraffic simulation model. All key intersections were evaluated with their present configuration and traffic control, with a variety of interim or spot improvements, and with the ultimate configurations and corridor alternatives. The chief benefit of the simulation model is that it reflects operational interactions between the intersections and results in a more robust systems evaluation. The results for the various alternatives are discussed in Section 9, Alternatives Development and Section 10, Strategies and Recommendations.

8.4 Corridor Access Inventory

Access management includes planning and management of the location and spacing of access (driveways and connecting streets) to help maintain safe and efficient movement of traffic. It can be used to reduce the effects of multiple, closely spaced driveways on traffic and improve the safety and efficiency of the roadway. It is one of the methods used to balance land use and transportation along transportation facilities.

An inventory of the number of access points located along the urban segment (Segment A) was conducted as part of the field investigation phase of the study. The urban segment was further sub-divided into three segments for analysis purposes. The three sub-segment divisions include:

- Sub-segment 1 – Between Green Bay Street and East Avenue/Ward Avenue
- Sub-segment 2 – Between East Avenue/Ward Avenue and Shelby Road
- Sub-segment 3 – Between Shelby Road and the US 14/61/WIS 35 intersection

As shown in Table 13, Access Inventory, there are a number of private driveways located along the urban segment of the study area.

Table 13 – Access Inventory

Access Type	Segment 1 (1.03 miles)	Segment 2 (1.25 miles)	Segment 3 (1.34 miles)	Entire Urban Segment (3.62 miles)
Public	0	1	0	1
Commercial/Industrial	26	53	25	104
Residential	12	6	10	28
Intersecting Streets	14	6	4	24
Total Number of Access Points	52	66	39	157
Access Points per Mile	50.5	52.8	29.1	43.4

As rural areas urbanize, future access is not always a consideration of development. Though development usually enhances the economic vitality of a region, too many access points can increase and/or speed up the rate at which congestion, increased crashes, and land use/transportation conflicts arise.

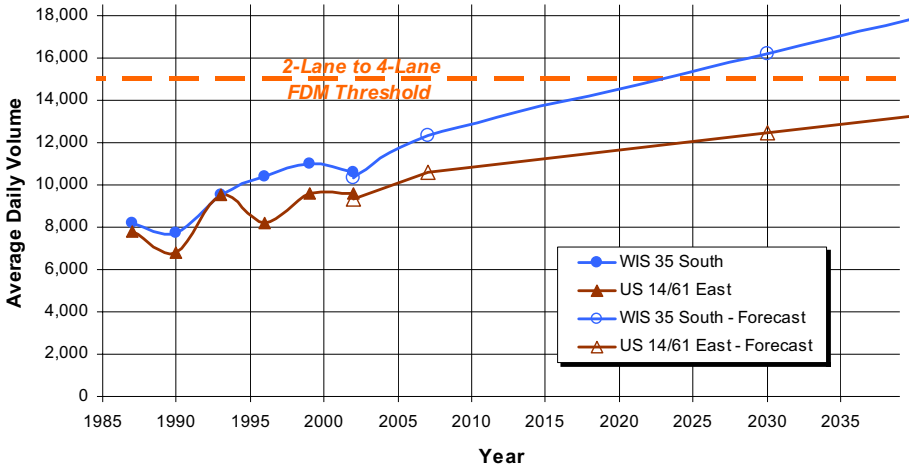
Access management strategies and recommendations were developed as part of the mainline range of alternatives (see Section 10.5, Access Management Strategies and Recommendations).

In the rural segments of the corridor (segement B & C) access has been limited through the development of right-of-way plats depicting where current and future access would exist along those corridors.

8.5 WIS 35 and US 14/61 Rural Segments

The historic and forecast traffic volumes on the two rural segments extending south and east of the US 14/61/WIS 35 intersection are illustrated in Figure 9, Rural Segment Volumes. The plot also shows the two-lane to four-lane threshold defined in the WisDOT Facilities Development Manual (FDM). This threshold is only a guideline for considering when a two-lane road may reach its practical capacity.

Figure 9 – Rural Segment Volumes



The projected volume for WIS 35 South is expected to cross the 15,000 vehicle per day threshold sometime around 2025. This segment is currently being redesigned and is tentatively scheduled for construction in 2010. The reconstruction will address access, safety, and other issues at the intersections with Old Town Hall Road, Riverview Drive, and Sunnyside Drive. The design of the segment adjacent to the US 14/61/WIS 35 intersection may depend on the alternative chosen for improving that intersection.

The segment of US 14/61 east of the US 14/61/WIS 35 intersection is not expected to reach the 15,000 vehicle per day threshold until sometime well after 2030. This indicates no immediate need to plan for widening from two lanes.